A critical appraisal of "Arthroscopic hip surgery compared with physiotherapy and activity modification for the treatment of symptomatic femoroacetabular impingement: multicentre randomised controlled trial"

By

Julia Seago, SPT

In partial fulfillment of the

requirements for the course:

PT 7240 Evidence-Based Practice in Physical Therapy

Department of Physical Therapy

Angelo State University

Member, Texas Tech University System

November, 2021

Abstract

Femoroacetabular impingement (FAI) is a syndrome where there is either a cam or pincer morphology where the femoral head and acetabulum pinch up against each other. The common methodologies to rehabilitate FAI are surgery and physical therapy. My critical appraisal is over the article by Palmer et al. which discusses which of these methodologies is the best. I started off by looking at different data bases and complying the top three randomized control trail research articles. Finally, I choose my article because it was the best one that could help me answer my question. The article is randomized and does not have bias because it blinded the clinicians who were assessing the patients.

The introduction of the article gives a background in femoroacetabular impingement (FAI) syndrome and why this study is relevant. However, the researchers give more information over surgery compared to physiotherapy. In the methods, the authors described how they divided the groups in good detail. There was a large population of patients in the study, and even though the patients were not blinded, the clinicians accessing the patients were. The results section was presented clearly and had good graphs and tables to better present their research. In the discussion section, the limitations were recognized, and it states that the interventions were performed by high skilled professionals.

Key words

Femoroacetabular impingement (FAI), surgery, physical therapy

Introduction

Femoroacetabular impingement (FAI) syndrome is a common injury that many physical therapists see daily. The two different morphologies for FAI are cam or pincer impingement. Cam impingement is when the femoral head has deformed and now is rubbing against the

acetabulum. Pincer impingement is when the acetabulum has overgrown and is now crunching on the femoral head. Both of these can be very painful for the patient especially when they are in hip flexion, adduction and internal rotation. FAI can lead to other problems such as labrum tears or arthritis. This is why this critical appraisal over this article is important. Surgery is a common methodology for femoroacetabular impingement (FAI) syndrome, but as physical therapists, we want to prevent our patients from having surgery. This research paper compared if surgery or physical therapy was a better methodology for these patients. My question is "does a personalized hip physical therapy program reduce pain in people with hip impingement syndrome compared to hip arthroscopy?"

Methods

The data bases I used were PubMed, APTA, and EBSCO. The key words I used were acetabulum labrum tear, acetabulum labrum tear strengthening, and acetabulum labrum tear surgery. The limitations I used in my search were making sure the articles were in English, they are full-text, are up-to-date and current research, and they were published within the past 15 years. I used these limitations because I can only read English, and I did not want outdated research. I wanted to look through at least 100 articles from the database. Once I found about 10 articles that where applicable to my research question, I then read the articles to see which one would be the best.

This article is from the British Medical Journal. It was published in 2019 by Palmer et al. and was conducted in England. I chose this article because it is a randomized clinical trial that includes over 200 patients. This reduces the bias from the clinicians and allows them to see the outcomes from a wide range of people. Even though this study is not blinded to the clinicians

and patients, it is blinded to the clinicians that are doing an eight-month follow up. This allows these clinicians to not have biased towards surgery or physical therapy intervention. To fully rehab a labrum surgery, it can take up to six months. Allowing an eight-month follow up gives the patients long enough to feel the more long-lasting effects from the surgery.

Results

Summary of the study

Femoroacetabular impingement (FAI) syndrome patients can have abnormal morphologies of their femoral head or acetabulum that can cause damage to the labrum. Surgery and physical therapy are the most common ways to treat FAI. This study was done to compare which method is most beneficial for the patient. The participants are from the ages of 18-60 and are referred to physical therapy with a diagnosed FAI from an MRI. The surgeons were chosen from clinics who performed hip arthroscopies regularly and could give patients the exercise program. This study is randomized and not blinded, but the researchers who did a follow up on the patients were blinded. After eight months post interventions, the patients were assessed on their hip outcome score, range of motion, and pain hip assessments. In conclusion, hip arthroscopic surgery had a better outcome than physical therapy alone.

Appraisal of the study introduction

The introduction gives a well-rounded background of femoroacetabular impingement (FAI) and how it is a prevalent injury in the physical therapy profession. The literature review provided a background in FAI, the different types of morphology of the femoral head, and statistics about those affected with FAI. There are also good pictures in the introduction that helps the reader understand the

different morphologies. The specific purpose of the study is to conclude if surgery or physiotherapy and activity modifications would be more beneficial for FAI patients.

There should be more information on physiotherapy and activity modification. The author just included that is it the primary treatment for FAI. They needed details on the type of physiotherapy and activity modifications and how it is the primary treatment. If there is only background information on surgery, then it leads to bias that surgery is the better intervention in introduction. Additionally, even though the author gives a background of hip arthroscopy, they do not go into detail on each method, so only someone who has a good background on these topics would be able to understand each intervention.

Appraisal of the study methods

This is a randomized controlled trial. It is a prospective, longitudinal, and single blinded study. There were 222 participants recruited and 34 did not complete the study. These participants either withdrew consent before intervention, the clinicians could not contact them, or they missed the follow-up. This still allowed the study to have 188 participants, so this study had a significant amount of subjects. The clinicians who accessed the outcomes were blinded to the subject's group assignment. This limited bias for the eight-month follow up. They just state that the primary outcome measurement is the HOS ADL (hip outcome score activity of daily living). This is something that anyone could look up. Finally, the researchers gave a good flow chart showing how they chose their subjects from initial recruitment all the way to the subjects included in the analysis.

The subject's group assignment was not concealed from people enrolling individuals in the study, and the subjects were not masked to their assignment. However, it was not possible to blind the subjects from surgery. The interventions themselves are not described in enough detail. For the

physiotherapy and activity modifications intervention group, it only says that there was a program tailored to each person with muscles strengthening and core stability. For the surgery group, it says that each surgeon had a standard technique for hip arthroscopy. If someone were to do this study again, then they would not be able to replicate it because they have the details how to execute the intervention.

Appraisal of the study results

The result section is written in an organized in clear manner. This section flows well and talks about all the topics well. The results addressed the research question. The hypothesis was addressed and the researchers talked about how surgery and physiotherapy affected the patients. All the figures and tables are presented early, and helps the reader understand the data. The primary and supporting analysis of the study had statistically significant p values. The secondary analysis of the patient also had statistically significant p values for every PROM except for HADS anxiety. For the eight- month follow up, there is statistically significant in pain on flexion, pain on abduction, pain on adduction, and FabER.

For ROM values, the only value that was statistically significant was hip flexion. This means that extension, abduction, adduction, internal rotation and external rotation ROM had no statistically significant p values.

Appraisal of the study discussion

The discussion is also written in a clear, concise manner. The author compared their results to two other studies that also tested the same interventions. The surgeons that were recruited for the study were able to perform hip arthroscopies at a high level, so this led to minimal complications for the surgery group. Also, the physiotherapists were well trained in the rehabilitation program.

Limitations are recognized in this study. A limitation is that most of the participants are recruited from the coordinating center. Another limitation is that the difference between the groups are specific to the cohort and method. Not including patients with hip dysplasia or OA is another limitation of the

study. Even though surgery was shown to be a better intervention in this study, this is not the case among all patients because each patient is different.

Discussion

Hip impingement problems and labrum tears are common sources of pain seen at the clinic. Some try to prevent having surgery by doing conservative physical therapy treatment. However, in the long run, is this the best method for a patient? Even though as physical therapists we want to prevent our patients from having surgery, if surgery is the best outcome for quality of life, then we should be aware of this. Also, we should be aware of the best ways of physical therapy for patients after surgery for an optimal outcome. Even though this study does not support my question, it gives insight on what could be the best intervention for a patient.

I believe that surgery is a good intervention for young, athletic patients with FAI. However, if they were to get this surgery, then there needs to be quality physical therapy post-op. Surgery alone will not help the patient. There are risks for surgery, and the surgery might not even benefit every patient. Surgery is also expensive so not every person who needs it could be able to get it. Therefore, physical therapy is the more fiscally responsible option. If the patient was given physical therapy only, the morphology of the changed bone would not heal, so this could cause an increase of impingement and lead to further complications in the future. Even though there is a risk for surgery, getting rid of the cause of the problem could benefit the patient in the long run.

I believe there is enough validity in this paper to able to consider using this evidence for my future patient. If my patient was older and not wanting to go back to a high level of activity, then I think physical therapy is the better intervention for them. However, if my patient was a

young athlete, then they might benefit from surgery if they have a bone morphology. I myself could not implement surgery but would be able to give the patient physical therapy whether they received surgery or not.

I think this article is well written and does not try to bias themselves towards surgery or physical therapy. Even though it states that surgery is the better intervention, they do conclude that there needs to be further research to actually see which intervention is more beneficial for the patients.